STATE OF MONTANA
DEPARTMENT OF ADMINISTRATION
ARCHITECTURE AND ENGINEERING DIVISION
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DESIGN QUALITY CONTROL PROCEDURES

The following are quality control procedures established to ensure bidability, constructability and operability of the Plans and Specifications at the 95% review stage prior to submission to the Architecture & Engineering Division. It is imperitive the Architect/Engineer comform to these requirements in order to reduce problems, conflicts, errors, omissions, etc. during the Project's construction.

1. Specification Review (pertains to all disciplines).
   a) Review specifications for bid items (proposal form) and entire boiler plate to ensure coordination.
   b) Review specifications for coordination with the plans and notes.
   c) Review specifications for phasing of construction and to ensure it is delineated appropriately.
   d) Compare architectural finish schedules with material types contained in the specifications to ensure all items are specified appropriately.
   e) Review major furnishings and equipment to ensure coordination of component types, model numbers, etc. with the plans.
   f) Verify that all items listed in the specifications "as indicated" or "where indicated" are actually shown on the plans.
   g) Ensure all cross-references to other specification sections are accurate.

2. Civil Plan Review.
   a) Review site plans for interference of utilities (old and new) including, but not limited to, telephone, electrical, sewer, water, gas, storage tanks, pipelines and storm drainage.
   b) Review site plans for interference of utilities with sidewalks, driveways, landscaping, fire hydrants, lighting, easements, rights-of-way, etc.
   c) Review site plans to ensure construction phasing can be accomplished as specified when coordinated with the untilities.
   d) Verify site plans to be consistent with landscaping plans.
   e) Review civil plans and profiles for interference of utilities.
   f) Verify that all existing and proposed grade elevations are shown and coordinated with all utilities, sidewalks, driveways and landscaping.
   g) Check all other disciplines' plans for conflicts.
   h) Verify all plan notes do not conflict with specifications.

3. Structural Plan Review.
   a) Review columns and column lines on structural and architectural plans to ensure coordination.
   b) Ensure all beams and columns are scheduled.
   c) Verify all structural dimensions coordinate with architectural plans.
   d) Review all floor/roof elevations comply with architectural plans.
   e) Verify slope of all slabs are indicated.
   f) Verify all footings, foundation, foundation piers and foundation beams are identified.
   g) Review all footings, foundation, foundation piers and foundation beams with all utility penetrations to ensure no conflicts.
   h) Review all roofing, framing and perimeters match architectural plans.
   i) Verify all expansion joint locations against architectural plans.
   j) Check all building penetrations against mechanical/electrical/architectural plans for conflicts.
   k) Check all other disciplines' plans for conflicts.
   l) Verify all plan notes do not conflict with specifications.

4. Architectural Plan Review.
   a) Compare architectural building print against civil site plans and site survey.
   b) Verify all setbacks.
   c) Verify all columns and beams, including column lines, against structural plans.
   d) Review all plans for delineation of existing and new work.
   e) Check all building elevations, including roof lines, windows, doors, expansion joints, slabs, and floors.
   f) Review all building and wall sections and details for proper elevations and plan layout including structural plans.
   g) Verify all expansion joints, masonry openings, steel layout, columns, beams, etc. with structural plans.
   h) Check ceiling and reflected ceiling plans against all light fixtures, diffusers, grilles, return/supply openings, etc. for conflicts.
   i) Check all other disciplines' plans for conflicts.

j) Review the finish schedule for all rooms for inclusion of room numbers, names, finishes, ceiling heights/types, trim, etc.
k) Verify all door and window schedule infomation with regard to sizes, types, hardware, labels, etc.
l) Locate and verify all fire-rated walls, load bearing walls, etc. to ensure they are delineated and designed properly.
m) Verify all furnishings, equipment and peripheral items are accounted for, located, and specified.
n) Verify all plan dimensions.
o) Verify all plan notes do not conflict with specifications.

5. Mechanical Plan Review.
   a) Check all utility locations against civil plans.
   b) Review all plumbing fixture locations against architectural plans.
   c) Verify plumbing fixture schedule to match the types in specifications.
   d) Check storm drain and roof drain systems against architectural and structural plans to ensure no conflicts with structure and other features.
   e) Verify all sanitary piping is identified. Provide invert elevations at the appropriate locations. Check piping under slab to avoid footings, foundation beams, etc.
   f) Compare HVAC plans against architectural, electrical and structural plans. Verify there are no conflicts with wall penetrations, fire walls are coordinated, lighting fixtures and diffusers do not overlap, etc.
   g) Review equipment locations, sizes and schedule against architectural, electrical and structural plans to ensure all items are accounted for and are located properly.
   h) Verify fire protection plans identify the appropriate occupancies and the coverages required.
   i) Verify fire flow data and make sure it is contained in the plans or specifications.
   j) Review all ductwork, diffusers, grilles, registers, fire/smoke dampers, etc. for sizing and locations.
   k) Verify all plan dimensions.
   l) Verify all plan notes do not conflict with specifications.

6. Electrical Plan Review.
   a) Review all plans against architectural to ensure no conflicts.
   b) Verify lighting fixture locations against architectural reflected ceiling plan.
   c) Check lighting fixture schedule to include all types and verify plans indentify all fixture types.
   d) Review all equipment and furnishing locations which require electrical connection.
   e) Ensure all fire walls maintain their integrity by specification or plan notes.
   f) Verify all panels and switchgear are located per code with respect to space, mounting, etc.
   g) Verify all protect switchgear and breaker sizes. Check that short-circuit ampacity is appropriate.
   h) Verify all plan dimensions.
   i) Verify all plan notes do not conflict with specifications.

NOTE: THE ITEMS COVERED IN THIS LIST ARE NOT MEANT TO BE COMPREHENSIVE. EACH DESIGNER MUST BE RESPONSIBLE FOR HIS/HER OWN WORK AND VERIFICATION OF SAME.